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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,504

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CIRTESS

6658

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10/17/2008

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EXAMINER

ORTIZ RODRIGUEZ, CARLOS R

ART UNIT

PAPER NUMBER

2123

MAIL DATE

DELIVERY MODE

10/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,504

Applicant(s)

BARLIER ET AL.

Examiner

CARLOS ORTIZ RODRIGUEZ

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☒ Claim(s) 13-17, 20, 23, 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date 08/04/08 and 08/26/08

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 07/08/08 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final.

Drawings

2. The drawings received on 07/08/08 are accepted and entered.

Specification

3. The amendment to the Specification including the Abstract received on 07/08/08 are accepted and entered.

Claim Objections

4. Claim 13 provides for "producing a mechanical part by computer-aided design including a preliminary step in which body portions of the part are broken down into *elementary strata*" (see Lines 1-2). Later in Line 16-17, Claim 13 indicates "assembly of the *elementary strata*". Confusion is created when referring to "the elementary strata" because it seems like in some occasions "the elementary strata" is a CAD model representation of a part and at other occasions it seems to be a physical part being

assembled. Appropriate clarification is required, with respect to when the term "elementary strata" is referring to a CAD model representation of the part and when it is referring to a physical part per se.

5. (Claim 13 Lines 16-17, Claim 14 Line 10, Claim 15 Line 7 and Line 9, Claim 16 Line 2, Claim 17 Line 2, Claim 20 Line 2 and Line 4, and Claim 23 Lines 2-3) objected to because of the following informalities: The term "the elementary strata" would be better if written as "the manufactured strata", in order to maintain consistency throughout the claims; see for example Claim 13 Lines 5-6 where it provides for assembling the manufactured strata. Appropriate correction is required.

6. (Claim 13 Lines 10-11 and Claim 14 Lines 4-5) provide for "breaking down the fluid transport circuit ... as part of the *break-down associated with the part* and during the *break-down of the part*". What is the difference between the term "*break-down associated with the part*" and the term "*break-down of the part*". If these two terms are referring to the same break-down then both terms should be identical to avoid confusion. If they are referring to different break-downs then further clarification is required in order to distinguish the difference between "being associated" and "being of" the part. Appropriate correction is required.

7. (Claim 14 Line 3) objected to because of the following informalities: The term "breaking-down" would be better if written as "breaking down" (without the hyphen), in

order to maintain consistency throughout the claims (see for example Claim 1 Line 9).
Appropriate correction is required.

8. Claim 20 objected to for the following reasons:

Please note that Claim 20 depends on Claim 15; and Claim 15 depends in the alternative form to Claim 1 or to Claim 2. Note that Claims 1 and 2 have been currently deleted. It appears to be that Claim 15 should depend either on Claim 13 or 14. If this is the case, when Claim 15 depends on Claim 13 the term "an additional isolating circuit" (in Claim 20 Line 3) would lack antecedent basis because there is no other "isolating circuit" previously mention in the claims.

Furthermore, after making the appropriate corrections to Claim 14, Claim 15 and Claim 20, please revise and correct Claim 21 and Claim 22 accordingly. Because please note the Claim 21 and Claim 22 provide for "the isolating circuit". This term will make the claims ambiguous because it will be unclear if the term "the isolating circuit" is referring to a first isolating circuit or to an additional isolating circuit.

9. (Claim 24 Lines 2-3) objected to because of the following informalities: The term "the group" would be better if written as "a group". Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 14-25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Specifically, Claim 14 recites the limitation "an additional isolating circuit" in Line 3. There is insufficient antecedent basis for this limitation in the claim because there is no other "isolating circuit" previously mention in the claims.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 13-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al., "Design and Evaluation of a Laser-Cutting Robot for Laminated, Solid Freeform Fabrication", 2000 IEEE (hereinafter Choi) in view of Sachs et al. U.S. Patent No. 5,775,402 (hereinafter Sachs).

- a. **Regarding claim 13**, Choi discloses a method for producing a mechanical part by computer-aided design including a preliminary step in which body portions of the part are broken down into elementary strata followed by steps

including manufacture of the elementary strata and reconstruction of the part by superposing and assembling the manufactured strata; breaking down the part into a plurality of elementary chambers as part of the break-down associated with the part and during the break-down of the part; producing elementary chambers in the elementary strata of the part during the manufacture of the elementary strata; and completely reconstructing the part during the superposition and the assembly of the elementary strata (Fig 1 and Page 1551, Column 1, 3rd full paragraph).

But Choi fails to clearly specify defining at least one fluid transport circuit in the part; breaking down the fluid transport circuit into a plurality of elementary chambers; producing the elementary chambers in the elementary strata of the part during the manufacture of the elementary strata; and completely reconstructing the fluid transport circuit during the superposition and the assembly of the elementary strata.

However, Sachs discloses defining at least one fluid transport circuit in the part; breaking down the fluid transport circuit into a plurality of elementary chambers; producing the elementary chambers in the elementary strata of the part during the manufacture of the elementary strata; and completely reconstructing the fluid transport circuit during the superposition and the assembly of the elementary strata (Abstract, C4 L30-67 and C6).

Choi and Sachs are analogous art because they are from the same field of endeavor. They both relate to tooling made by solid free form fabrication techniques.

Therefore at time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above teachings disclosed by Choi and combining them with the teachings disclosed by Sachs.

One of ordinary skill in the art would have been motivated to do this modification in order to increase the overall toughness of the part/tool as suggested by Sachs (see for example, C5 L5-10).

b. **Regarding claim 14**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses the steps of: breaking-down an additional isolating circuit into elementary isolating chambers as part of the break-down associated with the part and during the break-down of the part; producing the elementary isolating chambers in the elementary strata of the part during the manufacture of the elementary strata; and reconstructing the isolating circuit during the superposition and the assembly of the elementary strata (Abstract, C4 L30-67 and C6)

c. **Regarding claim 15**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses a mechanical part including a body having at least one fluid transport circuit comprised of a plurality of channels formed in the body at a predetermined distance from a heat exchange surface associated with the body (C6 L14-36), wherein the fluid transport circuit is completely reconstructed during the assembly of the elementary strata, and wherein the plurality of elementary chambers are provided in at least one portion of the elementary strata and are placed in fluid-tight communication (C14 L6-26).

d. **Regarding claim 16**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein, following reconstruction of the elementary strata, the fluid transport circuit forms a plurality of parallel channels in the body of the part which follow or copy surface portions of the part at a predetermined distance from the surface portions (C6 L14-36).

e. **Regarding claim 17**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein, following reconstruction of the elementary strata, the fluid transport circuit forms a layer-shaped chamber in the body of the part (C6 L14-36).

- f. **Regarding claim 18**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein the fluid transport circuit includes a connection to a temperature regulating device (C14 L6-26).

- g. **Regarding claim 19**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above. Sachs further discloses wherein interior portions of the fluid transport circuit include a plurality of transverse fins providing mechanical reinforcement and stirring the fluid (C6 L14-36).

- h. **Regarding claim 20**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses which, following reconstruction of the elementary strata, further includes an additional isolating circuit provided in at least one portion of the elementary strata and having a plurality of elementary chambers placed in fluid-tight communication. (C14 L16-26).

- i. **Regarding claim 21**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein the isolating circuit is comprised of a plurality of parallel channels (C6 L14-36).

- j. **Regarding claim 22**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein the isolating circuit forms a layer-shaped chamber (C6 L14-36).

- k. **Regarding claim 23**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses which further includes a mechanical adhesive between the elementary strata on regions of the part extending from the channels to outside portions of the part, and an adhesive with a predetermined thermal conductivity on regions of the part extending from the fluid transport circuit to surface portions of the part (C16 L14-55).

- l. **Regarding claim 24**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein the fluid transport circuit is filled with a fluid selected from the group consisting of a heat exchange fluid, a thermal insulation fluid, a liquid material, a pulverulent material and a marking fluid (C6 L37-55).

- m. **Regarding claim 25**, the combination of Choi and Sachs discloses all the limitations of the base claims as outlined above.

Sachs further discloses wherein the mechanical part is a mold (Abstract).

Conclusion

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is 571-272-3766. The examiner can normally be reached on Mon-Fri 10:00 am- 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Carlos Ortiz-Rodriguez
Patent Examiner
Art Unit 2123

October 20, 2008

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123